

REMARKS

This is in response to the Office Action dated May 16, 2005. In the Office Action, claims 52-59, 66-73, 81-89 and 93-94 are rejected under 35 U.S.C § 102(b) as being anticipated by German Patent No. DE 2708177 (Stoll DE), claims 52-75 and 81-97 are rejected under 35 U.S.C. § 102(b) as being anticipated by Swiss Patent No. CH 438956 (Stoll CH), and claims 76-80 and 98-102 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Stoll DE and Stoll CH in view of U.S. Patent No. 6,543,560 (Trefz).

In this response, claims 52-102 are pending, including independent claims 52, 68, 83 and 93. Claims 52, 60, 65, 68, 83, 93 and 97 have been amended.

Independent claims 52, 68, 83 and 93 are rejected as being anticipated by either Stoll DE or Stoll CH, however, neither reference teaches each and every claim limitation of the independent claims. Each independent claim calls for a self-contained actuator device including a housing containing a substantially fixed mass of air sufficient to operate the actuator device and substantially sealed such that the substantially fixed mass of air is maintained therein. A moveable piston is positioned in the housing and separates the housing into a first chamber and a second chamber. Claims 52 and 68 call for an air transfer device positioned or located within the second chamber and selectively energized based upon air pressure in the first chamber to transfer air from the second chamber to the first chamber, which moves the piston and a piston rod in a retracting direction. To move the piston and rod in an extending direction, air is vented from the first chamber to the second chamber.

Claims 83 and 93 call for the piston to be moveable in response to a pressure differential between the first chamber and the second chamber. An air transfer device is located in the second chamber and is selectively operable to generate the pressure differential in the housing by transferring air from the second chamber to the first chamber, which thereby retracts the piston or moves the piston and a piston rod in a first direction. To extend the piston rod or move the piston and rod in a second direction, air is vented from the first chamber to the second chamber. Further, claim 93 calls for the air transfer device to maintain a pre-determined air pressure in the first chamber.

Stoll DE discloses a pneumatic unit 11 including an electrically-driven compressor 12, a control valve 13 connected to the compressor 12, a pneumatic cylinder 14 connected to the valve 13, and a piston 15 that goes back and forth within the cylinder 14. [Stoll DE, pg. 4]. The

pneumatic unit 11 integrates the electrically-operated compressor 12 with the cylinder 14 and piston 15 to eliminate an air hose connection between the two. [Stoll DE, pgs. 2-3]. Stoll DE does not disclose how air is delivered to the compressor 12, or to the cylinder 14 and the piston 15.

Stoll CH discloses a pneumatic assembly including a cylinder 1, an air compressor 2 and a motor 3 for driving the air compressor. A piston 4 is positioned within the cylinder 1 and guided by the cylinder 1 to move back and forth in a linear manner. The piston 4 divides the cylinder into two chambers. Piston movement is controlled by control valve 7. The valve 7 has four lines 9a-9d. Connection lines 9a and 9b provide for forward and reverse movement of the piston 7, respectively. Line 9c supplies air from the compressor 2 to the cylinder 1. In operation, air is supplied to the valve 7 via line 9c, and is then supplied to a first chamber of cylinder 1 by line 9a to move the piston 4 forward or to a second chamber of cylinder 1 by line 9b to move the piston 4 in reverse. [Stoll CH, pgs. 3-5]. Stoll CH does not disclose how air is delivered to the compressor 2.

Stoll DE and Stoll CH do not teach or suggest the subject matter required by independent claims 52, 68, 83 and 93. Neither reference teaches a self-contained actuator device that operates using a substantially fixed mass of air contained within a housing. There is no disclosure or suggestion in either reference that identifies the air supply for operating the compressor and it cannot be inferred from either reference that the pneumatic units contain a substantially fixed mass of air sufficient for operating the compressor.

The compressors of Stoll DE and Stoll CH are not positioned within the housing (claim 93) or within a second chamber of the housing (claims 52, 68 and 83). In Stoll DE, the compressor 12 is attached to one end of the pneumatic unit 11 with the valve 13 positioned between the compressor 12 and the cylinder 14. In Stoll CH, the compressor 2 is connected to an end of the cylinder 1 so that the compressor can be disconnected at 11. There is no disclosure or suggestion in either reference that the compressor is positioned within a chamber defined by the piston. In addition, there is no teaching or suggestion in either reference that the compressor transfers air from one chamber defined by the piston to another chamber defined by the piston, which thereby moves the piston in a particular direction.

Neither Stoll DE nor Stoll CH teach or suggest an air transfer device that is selectively energized based upon air pressure in the first chamber to transfer air from the second chamber to

the first chamber, as required by independent claims 52 and 68. Stoll DE and Stoll CH also fail to teach or suggest an air transfer device that is selectively operable to generate a pressure differential between a first chamber and a second chamber defined by the piston and transfer air from the second chamber to the first chamber, as claimed in independent claims 83 and 93.

In Stoll DE, the air compressor 12 is turned on whenever back-and-forth motion of the piston 14 is required. There is no disclosure or suggestion in Stoll DE that the air compressor is selectively energized based upon air pressure in the first chamber as claimed in claims 52 or 68, transfers air from a second chamber to a first chamber as claimed in claims 52, 68, 83 and 93, or maintains a pre-determined air pressure in the first chamber as claimed in claims 68 and 93.

In Stoll CH, the air compressor 2 is operated by the motor 3, which is turned on whenever operation of the compressor is desired to supply air to the valve 7 through line 9c. Although it is disclosed that valve 7 is operated by control pulses delivered through line 9d, there is no disclosure that control pulses, either electrical or pneumatic, are used to control operation of the compressor. Further, the independent claims of the present application call for air to be supplied to the first chamber of the piston from the compressor to retract the piston rod or to move the piston in a retracting direction or in a first direction, and for air to be vented from the first chamber to extend the piston rod or to move the piston in an extending direction or a second direction. However, in Stoll CH air is supplied to the valve 7 through line 9c, and the valve regulates flow of air to either a first chamber through line 9a (to move the piston 4 in a forward direction) or a second chamber through line 9b (to move the piston 4 in a reverse direction).

Therefore, neither Stoll DE nor Stoll CH discloses or suggests the claimed subject matter of independent claims 52, 68, 83 and 93, and withdrawal of the rejections is respectfully requested. Namely, neither reference discloses or suggests a self-contained actuator device including a housing containing a substantially fixed mass of air sufficient to operate the actuator device, the housing substantially sealed such that the fixed mass of air is maintained therein; an air transfer device positioned or located in the housing or in the second chamber; the air transfer device selectively energized (e.g., based upon air pressure in the first chamber as claimed in claims 52 and 68) to transfer air from the second chamber to the first chamber, thereby retracting the piston rod or moving the piston in a retracting direction or first direction; or extending the piston rod or moving the piston in an extending direction or second direction by venting air from the first chamber to the second chamber. Further, neither reference discloses or suggests the air

transfer device being selectively operable to generate a pressure differential between the first chamber and the second chamber (see claims 83 and 93), or operable to maintain a pre-determined air pressure in the first chamber (see claim 93). Dependent claims 53-67, 69-82, 84-92 and 94-102 depend from allowable claims 52, 68, 83 and 93, respectively, and are therefore allowable as well.

In view of the amendments and remarks presented herein, Applicant submits that the claims as filed are in condition for allowance and respectfully requests a timely Notice of Allowance be issued for this case. Applicant kindly requests that the Examiner telephone the attorney of record in the event a telephone discussion would be helpful in advancing the prosecution of the present application.

Respectfully submitted,



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